

Emily Sillars

ems2331@columbia.edu | (413) 336 - 6870
www.linkedin.com/in/emilysillars | emilysillars.github.io

EDUCATION

Columbia University: Fu Foundation School of Engineering <i>M.S. in Computer Science</i> <ul style="list-style-type: none">GPA: 3.737Courses: Operating Systems, Advanced Software Engineering, TLC (Types, Languages, Compilers)	New York, NY May 2023
New York University: Tandon School of Engineering <i>B.S. in Computer Science, Minor in Game Design</i> <ul style="list-style-type: none">Magna Cum Laude, recipient of the Josh Goldfaden Award and Founders Day AwardCourses: Unix Programming, Compiler Design and Construction, Design and Implementation of Programming Languages	Brooklyn, NY Jan 2021
The Center for Cartoon Studies <i>One Year Certificate in Cartooning</i> <ul style="list-style-type: none">A program covering all aspects of the creation and dissemination of comics, graphic novels and other visual narrative forms	White River Junction, VT May 2016

PROFESSIONAL EXPERIENCE

Geopipe <i>Research & Development Intern</i> <ul style="list-style-type: none">Used Racket and C++ to update and complete a three-year-old visualizer project for Geopipe's in-house DSL.Documented, fixed, updated, and enhanced DSL related regression tests; caught and fixed a bug in DAE file generationCommunicated with supervisor daily over slack message and video call; reported progress to a seventeen-person team at bi-weekly sprint meetingsPrepared and delivered an 8-minute presentation on Geopipe's in-house DSL at the Intern Showcase	New York, NY Jun 2022 - Aug 2022
<i>Unity Development Intern</i> <ul style="list-style-type: none">Resolved three bugs in Geopipe's Unity plug-in and expanded documentation on its functionalityDeveloped a 3D game demo featuring Geopipe's 3D city models using Unity with C#Communicated with supervisor clearly over slack message and video call, defined SMART goals and presented progress to a ten-person team at weekly stand-up meetings	Jun 2020 - Aug 2020

RESEARCH AND PROJECTS

Columbia University: Fu Foundation School of Engineering <i>TLC Project: JambaJuice (a small, functional language with modular type inference)</i> <ul style="list-style-type: none">Created the JambaJuice language (interpreted with Haskell; features a Hindley-Milner based type system extended with recursion) and a modular Hindley-Milner typing constraint generator and solver (implemented as a Haskell library)Our Haskell library, <i>PLCgen</i> (short for Prolog Constraint Generation) works in conjunction with our JambaJuice interpreter as a proof of concept for modular type inference; under the hood, it translates typing constraints into Prolog, then queries an SWI Prolog process to obtain its results.Collaborated with project partner on language and library design, and completed 80% of project implementation during pair programming sessions.	New York, NY Jan 2023 – May 2023
<i>Research Team Member: SSLANG (Sparse Synchronous Language)</i> <ul style="list-style-type: none">Contributed to the development of Edwards' and Hui's SSLANG compiler.Collaborated with research partner to investigate and adapt parts of GHC's inlining strategy for SSLANG; added a static inlining optimization pass to the SSLANG compiler, written in HaskellSupervised five team members' projects: hosted meetings twice a week, provided guidance, next steps, and reviewed codeAdded partial application of data constructors to the compiler; enhanced compiler's IR pretty printerAdded algebraic data types to the SSLANG code generator, producing C code that links with the runtime system	Sep 2021 – May 2023

TEACHING

Columbia University: Fu Foundation School of Engineering <i>Teaching Assistant: Types, Languages, Compilers (TLC)</i> <i>Teaching Assistant: Parallel Functional Programming (PFP)</i>	New York, NY Jan 2022 – May 2023 Sep 2022 – Dec 2022
New York University: Tandon School of Engineering <i>Head Teaching Assistant: Introduction to Operating Systems</i> <i>Teaching Assistant: Introduction to Operating Systems</i>	Brooklyn, NY Sep 2020 - Dec 2020 Sep 2019 - May 2020

SKILLS

Programming: C, C++, Unity Game Engine, C#, Java, Haskell, Racket, OCaml, Prolog, Smalltalk
Web Development: HTML, CSS, JavaScript, jQuery, Bootstrap framework
Version Control / Automation / Build Systems: Github, Github Actions, Google Test, Bazel, Make
Graphic Design: Adobe Photoshop, Adobe InDesign, Adobe Illustrator